AXIOMTEK

NA342

Network Appliance

User's Manual

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Safety Approvals

- CE Marking
- FCC Class B
- FCC Compliance

This equipment has been tested and complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. If not installed and used in accordance with proper instructions, this equipment might generate or radiate radio frequency energy and cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measurers:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.
Shielded interface cables must be used in order to comply with emission limits.

Safety Precautions

Before getting started, read the following important cautions.

1. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
2. Disconnect the power cords from the **NA342** before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge of power could ruin sensitive components. Make sure the **NA342** is properly grounded.
3. Do not open the system's top cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

    - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on your body.
    - When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

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CHAPTER 1
INTRODUCTION

This chapter contains general information and detailed specifications of the NA342 Network Appliance Server. Chapter 1 contains the following sections:

- **General Description**
- **Features**
- **Specifications**
- **Dimensions and Outlines**
- **I/O Outlets**

1.1 General Description

The NA342 is a desktop network security hardware platform for VPN, firewall and other network security applications, which can support Intel® ATOM E38xx family (formerly codenamed "Bay Trail"). This platform supports DDR3L 1066 memory with single channel up to maximum 8 GB for one SODIMM slot. In the meantime, the platform also can support 4 Gigabit LAN ports which can provide best throughput. For the purpose to store event log data, it can deploy one CF card. This platform can be easily enabled through application programs to make a user-friendly appliance for customers, and provide the highest ever performance of encryption and decryption.

1.2 Features

Low power and high performance for network security field applications. NA342 series supports Intel® ATOM Bay Trail prcoessors

- **Extreme slim style design (44mm x 231mm x 151mm)**
- **Embedded Intel® Atom™Bay Trail Processor**
- **Supports up to 8GB DDR3L 1066 memory**
- **Supports 4 Gigabit LAN ports**

1.3 Specifications

1.3.1 System

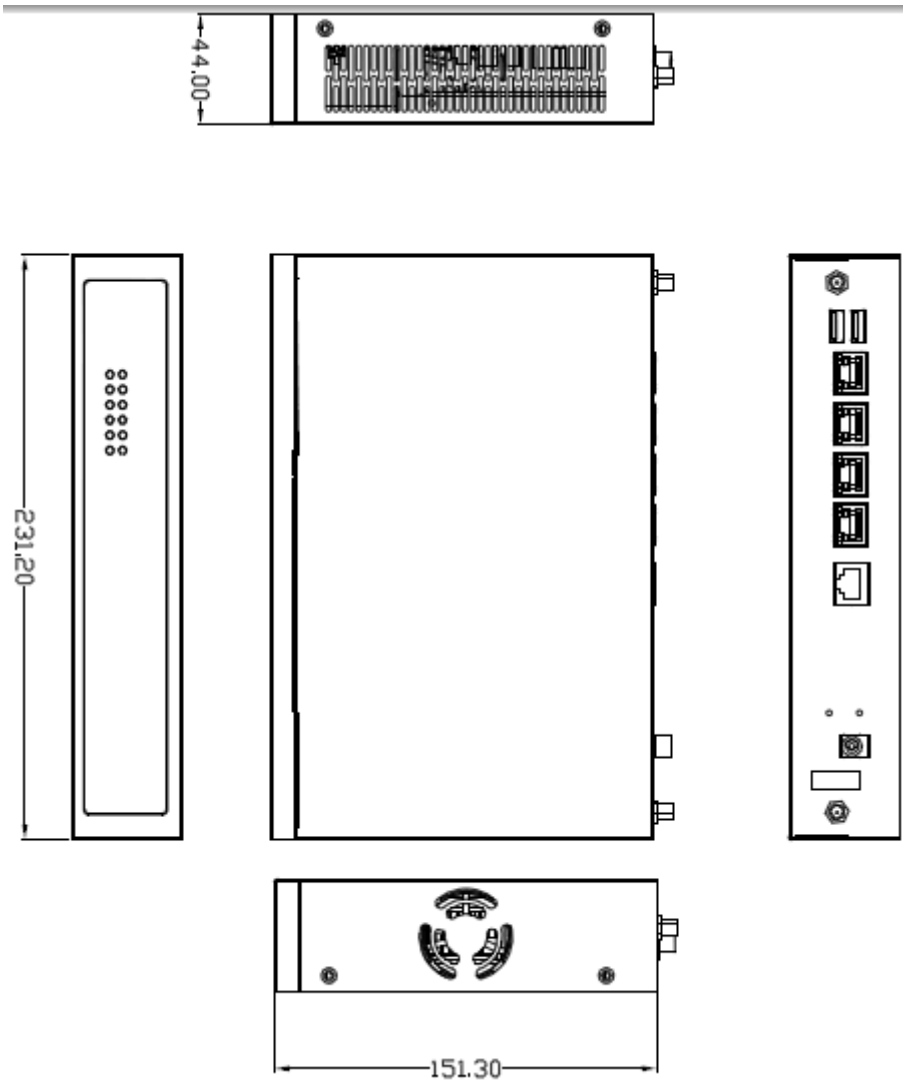
- **System CPU**
  - Intel® Atom Bay Trail processor onboard.
- **BIOS**
  - AMI 16Mbit PnP Flash BIOS with function of BIOS redirected to COM port
- **System Memory**
  - One DDR3L 1333 SODIMM up to 8 GB
- **Compact Flash**
  - One a CF socket.
- **Network Interface**
  - Network Interface
  - Four 10/100/1000Mbps Ethernet (Intel® i211)
  - One group LAN by pass support latch relay for optional.
- **Watchdog Timer**
  - One for lan by pass : 7 levels,1-64 seconds
  - One for system reset : 255 levels,1-255 sec
- **USB**
  - Two USB ports in the rear side
- **Console**
  - RS-232 Console port is the front side(RJ-type)
- **Power**
  - 1 x 12V/5A power adapter
- **OS Compatibility**
  - Linux kernel 2.6 or 3.x

1.3.2 Mechanical / Environmental

- **Form Factor**
  - 1U Desktop
- **LED**
  - Power, HDD, Link/Act with transfer rate
  - LAN by pass LED and programmable LED
- **Operation Temperature**
  - 0°C ~ 40°C (32°F ~ 104°F)
- **Storage Temperature**
  - -20°C ~ 70°C (-4°F ~ 158°F)
- **Humidity**
  - 10% - 95% RH, non-condensing
- **Chassis Material**
  - Steel
- **Dimensions**
  - 44mm (1.73") (H) x 231.2mm (9.09") (W) x 151.3mm (5.95") (D)
- **Weight (Net/Gross)**
  - 1 .2kg /2.2 kg

NOTE: ***All specifications and images are subject to change without notice.***

1.4 Dimensions and Outlines



1.5 I/O Outlets

Locate the front panel I/O outlets on the **NA342 Series** server to connect serial and Ethernet interface devices.

1.5.1 Front Panel

- **LAN By-Pass LED**

  While running the LAN By-Pass function, the LED always lights up.

- **Programmable LED**

  A sample code will be provided that allow users to define their own function.

NOTE: ***If you need sample codes please contact our FAE directly, and they are for reference purposes only.***

- **Power LED**

  It will be lighting when the server is powered on to perform diagnostic tests and check a proper operation.

- **LAN Link LED**

  It will be lighting when a twisted pair is connected to another Ethernet device on the port. It shows network transfer rate while making a connection.

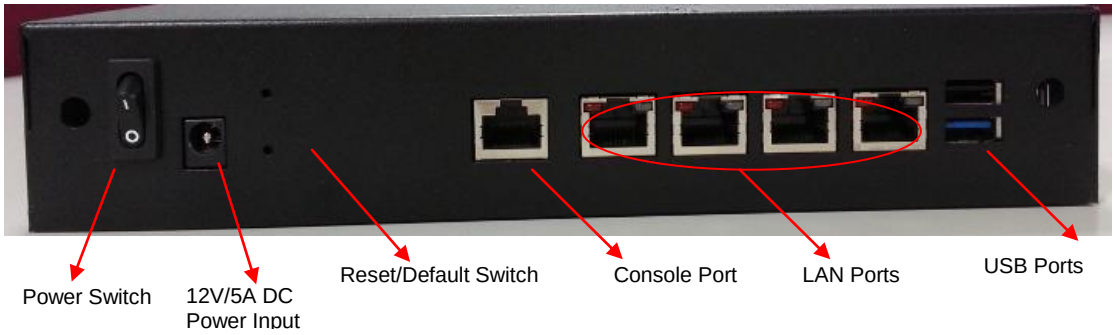
- **LAN Activity LED**

  It will be lighting when the server is transmitting or receiving a packet through the twisted pair ports.

- **HDD LED**

  The LED flashes when transmitting or receiving any signals.

1.5.2 Rear Panel



- **Reset Switch**

  It is is for reset the system to reboot your computer instead of turning OFF the power switch. It is a better way to reboot your system for a longer life of the system's power supply.

- **Default Switch**

  The sample code will be provided that allows users to define their own function. For example, when the system has any problems, this switch can support to reset it to the customer's OS default settings if our customer's OS supports this application.

NOTE: ***If you need sample codes please contact our FAE directly, and they are for reference purposes only.***

- **Console port**

  RS-232 Console port is for the command of line interface and of diagnostic support by P.O.S.T (Power on Self Test).

- **Active LED (Single color)for LAN port #1, port#2, port#3, port#4**

  1. The orange LED is on when the LAN port connection is working.
  2. The LED flashes when transmitting or receiving any signals to or from the appliance.
  3. The LED is dark when the appliance is off.

- **Link LED for LAN port #1, port#2, port#3, port#4**

  1. The double-color LED light indicates 10/100/1000Mbps transfer rate.
  2. When the amber-color LED light is radiating, it should be 1000Mbps transfer rate at this moment.
  3. When the green-color LED light is radiating, it should be 100Mbps transfer rate at this moment
  4. If the LED is dark and Link/Active LED is light on or flashing, it should be 10Mbps transfer rate.
  5. When this LED and Link/Active LED both are dark. No networking devices are attached

Transfer Rate	LED Light Color
10Mbps	Dark
100Mbps	Green
1000Mbps	Amber

CHAPTER 2
HARDWARE DESCRIPTION

The NA342 Series are convenient for your various hardware configurations. The chapter 2 will help you get familiar with the hardware.

2.1 Checklist

The package bundled with your NA342 Series should contain the following items

- **DC Power Adapter x 1,Power cord x 1**
- **Mounting screws for disk drive**
- **Cble kits (1 x SATA cable, 1 x SATA power cable)**
- **Plastic stand for stack–up x 4**

If you cannot find this package or any items are missing, please contact AXIOMTEK distributors immediately. If you order any optional components, the package might contain those additional hardware or documents accordingly.

2.2 Memory Module (SODIMM)

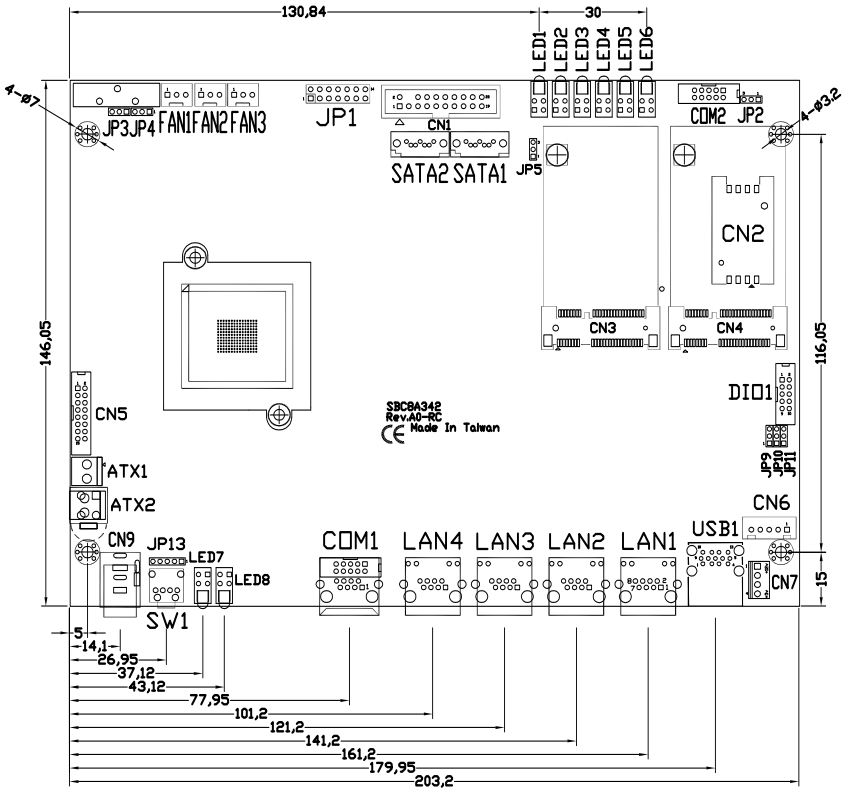
The main board supports one DDR3L 1333 SODIMM socket. Maximum memory capacity is up to 8GB None-ECC unbuffer memory.

The following steps show you how to install the memory modules:

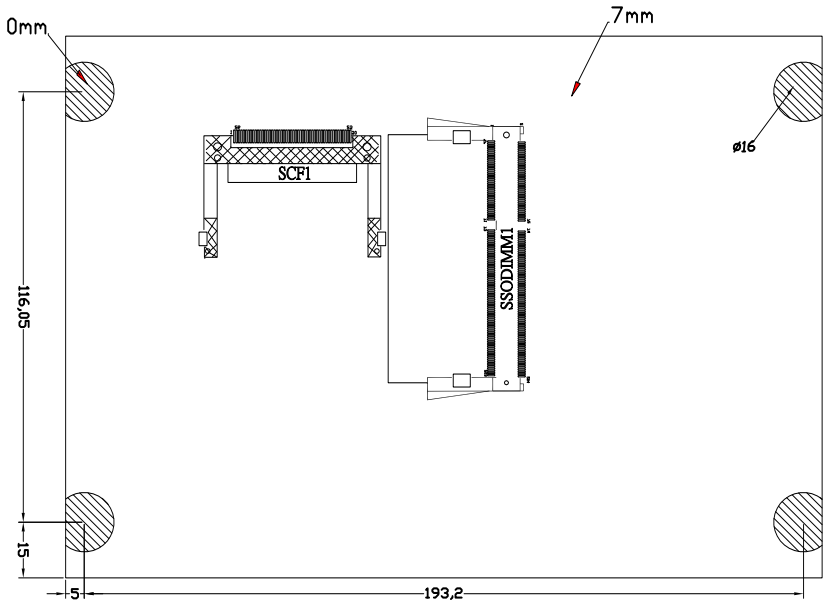
1. Push down each side of the SODIMM socket.
2. Align the memory module with the socket that notches of memory module must match the socket keys for a correct installation.
3. Install the memory module into the socket and push it firmly down until it is fully seated. The socket latches are levered upwards and clipped on to the edges of the DIMM.
4. Install any remaining SODIMM modules.

2.3 Board Layout

Component Side



Solder Side



2.4 Jumper Settings

This section provides the information about jumpers and connectors of NA342 Series. Proper jumper settings configure the main board in this appliance to meet your application purpose. We are herewith listing a summary table of all jumpers and default settings for onboard devices, respectively.

Jumper	Definition	Jumper Settings	Function
JP2	Auto Power Button Mode Selection	Short (1-2)	Auto Power On (Default)
		Short (2-3)	Power on By Power button
JP3	Reserve	Short(1-2)	Normal (Default)
JP4	Reserve	Short (1-2)	Normal (Default)
JP5	Compact Flash Voltage Selection	Short (1-2)	+3.3V (Default)
		Short (2-3)	+5V
JP9 JP10 JP11	LAN By-Pass Trigger when Power On	JP9 Short(1-2) JP10 Short(1-2) JP11 Short(1-2)	LAN Bypass same as Power Off status
		JP9 Short(1-2) JP10 Short(1-2) JP11 Short(2-3	LAN Bypass Disable(Default)
		JP9 Short(2-3) JP10 Short(1-2) JP11 Short(2-3)	LAN Bypass Enable
JP13	TACT SW1 Lower Button Function Selection	Short (1-2)	Power On/Off
		Short (2-3)	Reset (Default)
		Short (4-5)	GPIO

2.4.1 Auto Power Button Mode Selection (JP2)

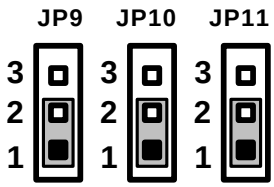
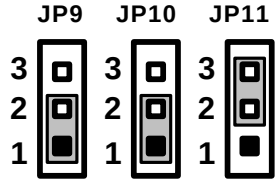
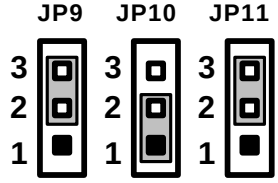
Description	Function	Jumper Setting
Auto Power Button Mode Selection	Auto Power On (Default)	3 2 1
	Power on By Power button	3 2 1

2.4.2 Compact Flash Voltage Selection Jumper (JP5)

Description	Function	Jumper Setting
Compact Flash Voltage Selection	+3.3V (Default)	
	+5V	

2.4.3 LAN Bypass Control Jumper (JP9, JP10, JP11)

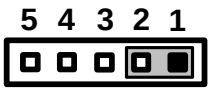
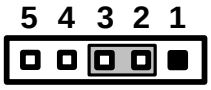
Use these jumper to select the LAN Bypass Function .

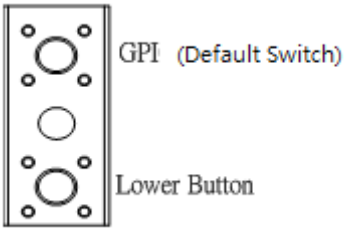
Description	Function	Jumper Setting
LAN Bypass Trigger When Power On	LAN Bypass as same as Power Off status	
	LAN Bypass Disable(Default)	
	LAN Bypass Enable	

NOTE: ***When the system is turned on, you can select LAN bypass function by Jumper and Bios when power on state , when enter the OS,you can select LAN pass function at power on/ off state by software ,the detail information please refer to the appendix A.***

2.4.4 TACT SW1 Selection (JP13)

Use this jumper to select the TACT SW1 Function.

Description	Function	Jumper Setting
TACT SW1 Lower Button Function Selection	Power On/Off	
	Reset (Default)	
	GPI	



***NOTE**: If you need GPI sample codes please contact our FAE directly, and they are for reference purposes only.*

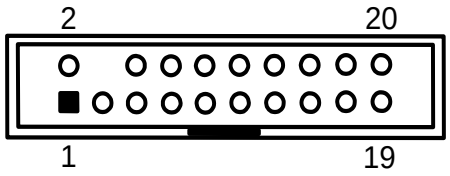
2.5 Connectors

Connectors connect the board with other parts of the system. Loose or improper connection might cause problems. Make sure all connectors are properly and firmly connected. Here is a summary table shows you all connectors on the main board.

Connectors	Label
TPM Connector	CN1
SIM Socket	CN2
MINI PCIe SLOT 1 (optional)	CN3
MINI PCIe SLOT 2	CN4
VGA Connector	CN5
LCM Connector or SATA Power Connector	CN6
Power Out Connector	CN7
Screw-type DC Jack/ DC Jack(default); power in connector for NA342	CN9
Power switch connector	ATX1
Power Input 12V Connector for NA342R	ATX2/3
Serial port1 RJ-type (External)	COM1
Serial port2 Box Header 2.0 (Internal)	COM2
LAN1 ~ LAN4 Connector	LAN1-4
USB 2.0/3.0 Connector	USB1
Digital I/O Port Connector for optional	DIO1
Serial ATA Connector (optional)	SATA1
Serial ATA Connector	SATA2
FAN 1Connector	FAN1
FAN2 Connector	FAN2
FAN3 Connector	FAN3
Front Panel Bezel Connector	JP1

2.5.1 TPM Module Connector (CN1)

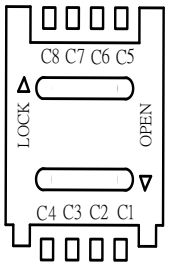
Pin	Signal	Pin	Signal
1	Clock	2	Ground (GND)
3	FRAME#	4	No use
5	PLTRST#	6	VCC (+5V Level)
7	AD3	8	AD2
9	+V3.3S	10	AD1
11	AD0	12	Ground (GND)
13	SMBCLK	14	SMBDAT
15	+3.3VSB	16	LPCPD_N
17	Ground (GND)	18	SERIRQ
19	SUSCLK	20	No use



2.5.2 SIM Socket (CN2)

In order to work properly, the SIM Card must be used together with Mini Card which is inserted to socket CN2 It is mainly used in 3G wireless network application.

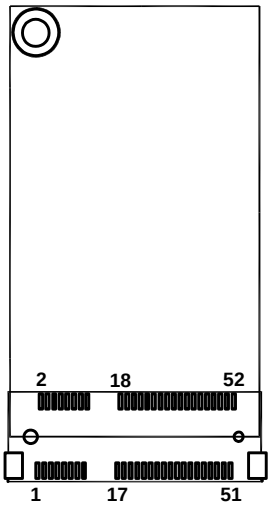
Pin	Signal
C1	PWR
C2	RST
C3	CLK
C4	No use
C5	Ground (GND)
C6	VPP
C7	DATA
C8	No use



2.5.3 MINI PCIe SLOT 1 (CN3)

The PCI-Express Mini Card socket support m-SATA (Optional) link and USB 2.0 interface only.

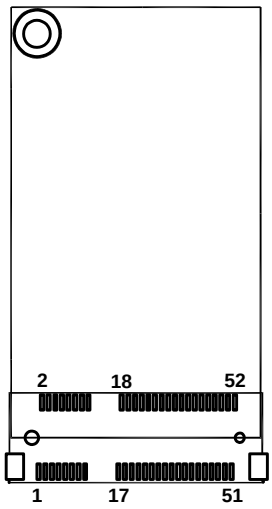
Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VSB
3	No use	4	Ground (GND)
5	No use	6	+1.5V
7	CLKREQ#	8	No use
9	Ground (GND)	10	No use
11	REFCLK-	12	No use
13	REFCLK+	14	No use
15	Ground (GND)	16	No use
17	No use	18	Ground (GND)
19	No use	20	W_DISABLE#
21	Ground (GND)	22	PERST#
23	SATA_RXP	24	+3.3VSB
25	SATA_RXN	26	Ground (GND)
27	Ground (GND)	28	+1.5V
29	Ground (GND)	30	SMB_CLK
31	SATA_TXN	32	SMB_DATA
33	SATA_TXP	34	Ground (GND)
35	Ground (GND)	36	USB_D2-
37	Ground (GND)	38	USB_D2+
39	+3.3VSB	40	Ground (GND)
41	+3.3VSB	42	LED_WWAN#
43	Ground (GND)	44	LED_WLAN#
45	No use	46	LED_WPAN#
47	No use	48	+1.5V
49	No use	50	Ground (GND)
51	No use	52	+3.3VSB



2.5.4 MINI PCIe SLOT 2 (CN4)

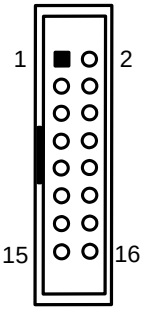
The PCI-Express Mini Card sockets which support PCI-Express x1 link (Optional) and USB 2.0 link. A PCI-Express Mini Card can be applied to either PCI-Express or USB 2.0. It complies with PCI-Express Mini Card Spec. V1.2.

Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VSB
3	No use	4	Ground (GND)
5	No use	6	+1.5V
7	CLKREQ#	8	No use
9	Ground (GND)	10	No use
11	REFCLK-	12	No use
13	REFCLK+	14	No use
15	Ground (GND)	16	No use
17	No use	18	Ground (GND)
19	No use	20	W_DISABLE#
21	Ground (GND)	22	PERST#
23	PE_RXN3	24	+3.3VSB
25	PE_RXP3	26	Ground (GND)
27	Ground (GND)	28	+1.5V
29	Ground (GND)	30	SMB_CLK
31	PE_TXN3	32	SMB_DATA
33	PE_TXP3	34	Ground (GND)
35	Ground (GND)	36	USB_D3-
37	Ground (GND)	38	USB_D3+
39	+3.3VSB	40	Ground (GND)
41	+3.3VSB	42	LED_WWAN#
43	Ground (GND)	44	LED_WLAN#
45	No use	46	LED_WPAN#
47	No use	48	+1.5V
49	No use	50	Ground (GND)
51	No use	52	+3.3VSB



2.5.5 VGA Connector (CN5)

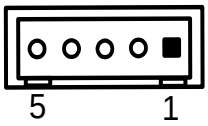
Pin	Signal	Pin	Signal
1	RED	2	DETECT
3	GREEN	4	NC.
5	BLUE	6	Ground (GND)
7	VCC (+5V Level)	8	DDC DATA
9	Ground (GND)	10	Ground (GND)
11	Ground (GND)	12	Horizontal Sync
13	Ground (GND)	14	Vertical Sync
15	DDC CLK	16	NC.



2.5.6 LCM Connector or SATA power connector(CN6)

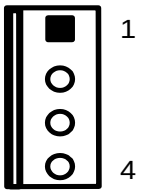
Support 2.5" SATA HDD power

Pin	Signal
1	VCC (+5V Level)
2	RXD of COM2
3	No Connection
4	TXD of COM2
5	Ground (GND)



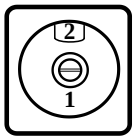
2.5.7 Power Output Connector (CN7)

Pin	Signal
1	+V12S
2	Ground (GND)
3	Ground (GND)
4	VCC (+5V Level)



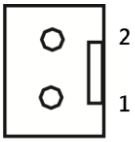
2.5.8 DC-In Power Jack (CN9)

Pin	Signal
1	+12V
2	Ground (GND)



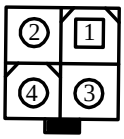
2.5.9 DC12V Power Switch connector (ATX1)

Pin	Signal
1	DC_12V1
2	DC_12V2



2.5.10 Power Input 12V Connector (AXT2/3) Optional

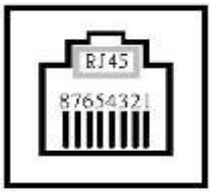
Pin	Signal
1	Ground (GND)
2	Ground (GND)
3	+12V Level
4	+12V Level



2.5.11 Serial Port1 For Console (COM1)

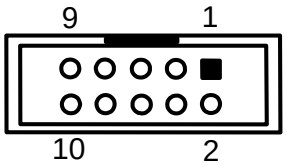
The COM1 Port connector is a RJ-type connector

Pin	Signal
1	Request to Send (RTS)
2	Data Terminal Ready (DTR)
3	Transmit Data (TXD)
4	Ground (GND)
5	Ground (GND)
6	Receive Data (RXD)
7	Data Set Ready (DSR)
8	Clear to Send (CTS)

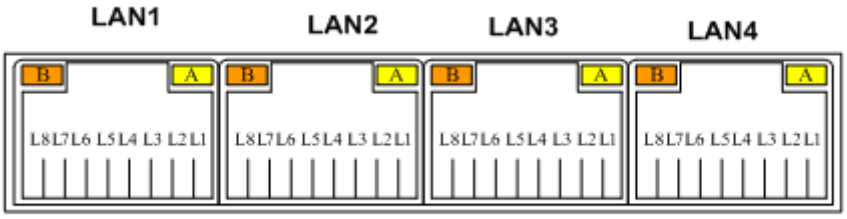


2.5.12 Serial Port2 Connector (COM2)

Pin	Signal
1	Data Carrier Detect (DCD)
2	Data Set Ready(DSR)
3	Receive Date(RXD)
4	Request to Send(RTS)
5	Transmit Data(TXD)
6	Clear to Send(CTS)
7	Data Terminal Ready(DTR)
8	Ring Indicator(RI)
9	Ground (GND)
10	NC.



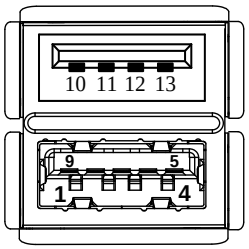
2.5.13 LAN1 ~ LAN4 Connector (LAN1~4)



Pin	Signal	Pin	Signal
L1	MDI0+	L5	MDI2+
L2	MDI0-	L6	MDI2-
L3	MDI1+	L7	MDI3+
L4	MDI1-	L8	MDI3-
A	Active LED (Yellow)		
B	100 LAN LED (Green)/ 1000 LAN LED (Amber)		

2.5.14 USB Port Connector (USB1)

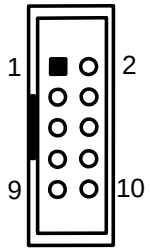
Pin	Signal
1	USB VCC (+5V level standby power)
2	USBN0
3	USBP0
4	Ground (GND)
5	SSRXN
6	SSRXP
7	Ground (GND)
8	SSTXN
9	SSTXP
10	USB VCC (+5V level standby power)
11	USBN1
12	USBP1
13	Ground (GND)



2.5.15 Digital I/O Port Connector (DIO1) for optional

The board is equipped with an 8-channel (4 inputs and 4 outputs) digital I/O connector that meets requirements for a system customary automation control. The digital I/O can be configured to control cash drawers and sense warning signals from an Uninterrupted Power System (UPS), or perform store security control. You may use software programming to control these digital signals.

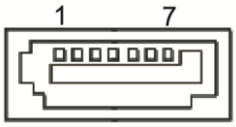
Pin	Signal
1	Ground (GND)
2	Ground (GND)
3	Digital Output 3
4	Digital Input 3
5	Digital Output 2
6	Digital Input 2
7	Digital Output 1
8	Digital Input 1
9	Digital Output 0
10	Digital Input 0



2.5.16 Serial ATA Connectors (SATA1, SATA2)

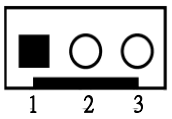
These Serial Advanced Technology Attachment (Serial ATA or SATA) connectors are for high-speed SATA interface ports. SATA1 is co-lay with CF or m-SATA(CN3).

Pin	Signal	Pin	Signal
1	Ground (GND)	2	TX+
3	TX-	4	Ground (GND)
5	RX-	6	RX+
7	Ground (GND)		

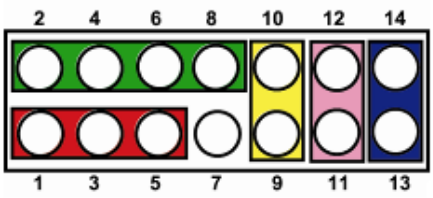


2.5.17 Fan Connectors (FAN1, FAN2, FAN3)

Pin	Signal
1	Ground (GND)
2	+12V level
3	Fan speed feedback



2.5.18 Front Panel Bezel Connector (JP1)



1. Power LED：

This 3-pin connector (Pin 1, 3, 5) connects a LED indicator to the system power switch on the case. Pin 1 is assigned as +, and Pin 3, Pin 5 as -. The Power LED lights up when the system is powered ON.

2. External Speaker and Internal Buzzer Connector：

This 4-pin connector (Pin 2, 4, 6, 8) can be connected to the case-mounted speaker unit or internal buzzer. While connecting the CPU card to an internal buzzer, please short pins 2-4; while connecting to an external speaker, you need to set pins 2-4 to Open and connect the speaker cable to pin 8 (+) and pin 2 (-).

3. ATX Power On/Off Button：

This 2-pin connector (Pin 9, 10) connects the front panel's ATX power button to the CPU card, which allows users to control ATX power supply to be power on/off.

4. System Reset Switch：

This 2-pin connector (Pin 11, 12) can be connected to the case-mounted reset switch that reboots your computer instead of turning OFF the power switch. It is a better way to reboot your system for a longer life of the system's power supply.

5. HDD Activity LED：

This connection is linked to hard drive activity LED on the control panel. LED flashes when HDD is being accessed. The 2-pin connector (Pin 13, 14) connects the hard disk drive to the front panel HDD LED, Pin 13 assigned as -, and Pin 14 as +.

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CHAPTER 3
AMI BIOS SETUP UTILITY

This chapter provides users with detailed description how to set up basic system configuration through the AMIBIOS8 BIOS setup utility.

3.1 Starting

To enter the setup screens, follow the steps below:
1. Turn on the computer and press the <Del> key immediately.
2. After you press the <Delete> key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Chipset and Power menus.

3.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.

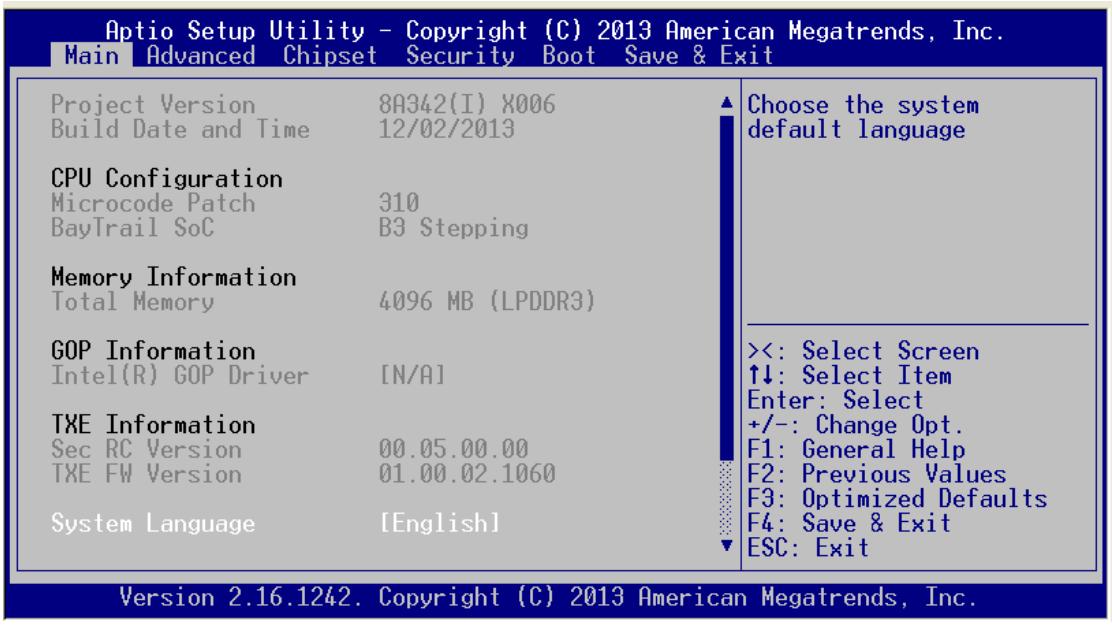
These keys include <F1>, <F10>, <Enter>, <ESC>, <Arrow> keys, and so on.

NOTE: Some of navigation keys differ from one screen to another.

← Left/Right	The Left and Right <Arrow> keys allow you to select a setup screen.
↑↓ Up/Down	The Up and Down <Arrow> keys allow you to select a setup screen or sub-screen.
+– Plus/Minus	The Plus and Minus <Arrow> keys allow you to change the field value of a particular setup item.
Tab	The <Tab> key allows you to select setup fields.
F1	The <F1> key allows you to display the General Help screen.
F10	The <F10> key allows you to save any changes you have made and exit Setup. Press the <F10> key to save your changes.
Esc	The <Esc> key allows you to discard any changes you have made and exit the Setup. Press the <Esc> key to exit the setup without saving your changes.
Enter	The <Enter> key allows you to display or change the setup option listed for a particular setup item. The <Enter> key can also allow you to display the setup sub- screens.

3.3 Main Menu

When you first enter the Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.



System Time/Date

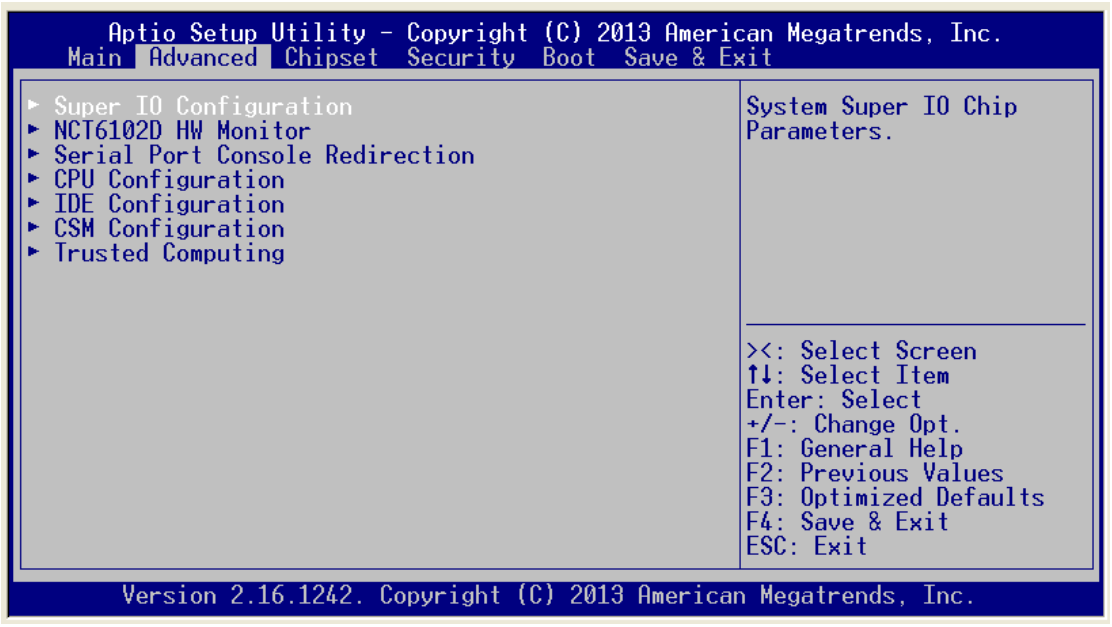
Use this option to change the system time and date. Highlight *System Time* or *System Date* using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

3.4 Advanced Menu

The Advanced menu allows users to set configuration of the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus:

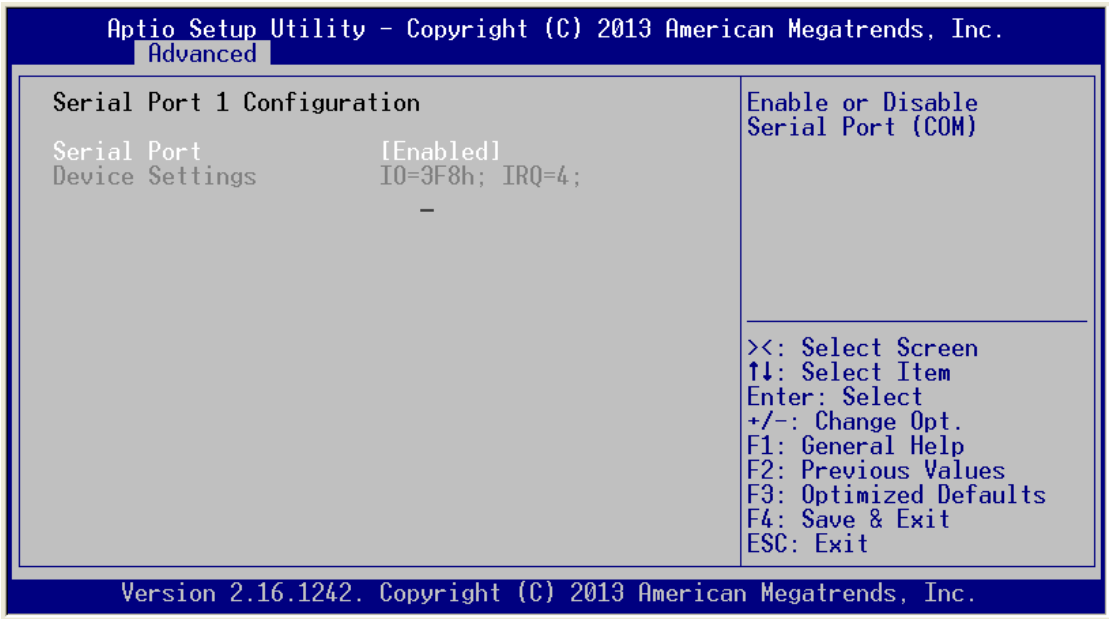
- **Super I/O Configuration**
- **NCT6102D H/W Monitor**
- **Serial Port Console Redirection**
- **CPU Configuration**
- **IDE Configuration**
- **CSM Configuration**
- **Trust Computing**

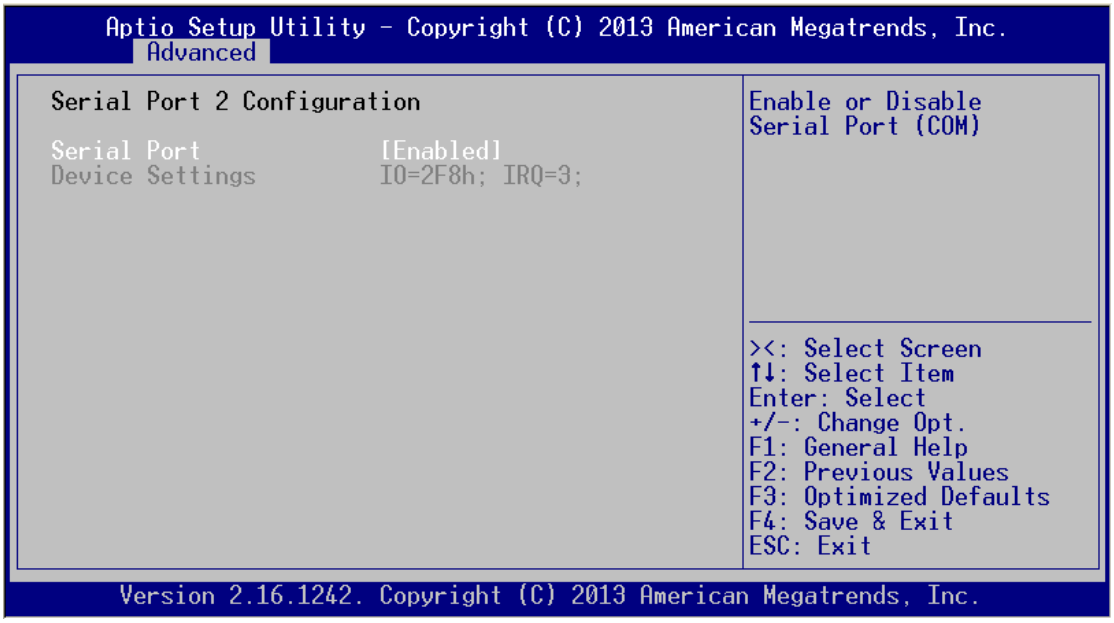
For items marked with "►", please press <Enter> for more options.


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit
► Super IO Configuration
► NCT6102D HW Monitor
► Serial Port Console Redirection
► CPU Configuration
► IDE Configuration
► CSM Configuration
► Trusted Computing
System Super IO Chip Parameters.
><: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Super IO Configuration

You can use this screen to select options for the Super IO Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.





Serial Port1 Address

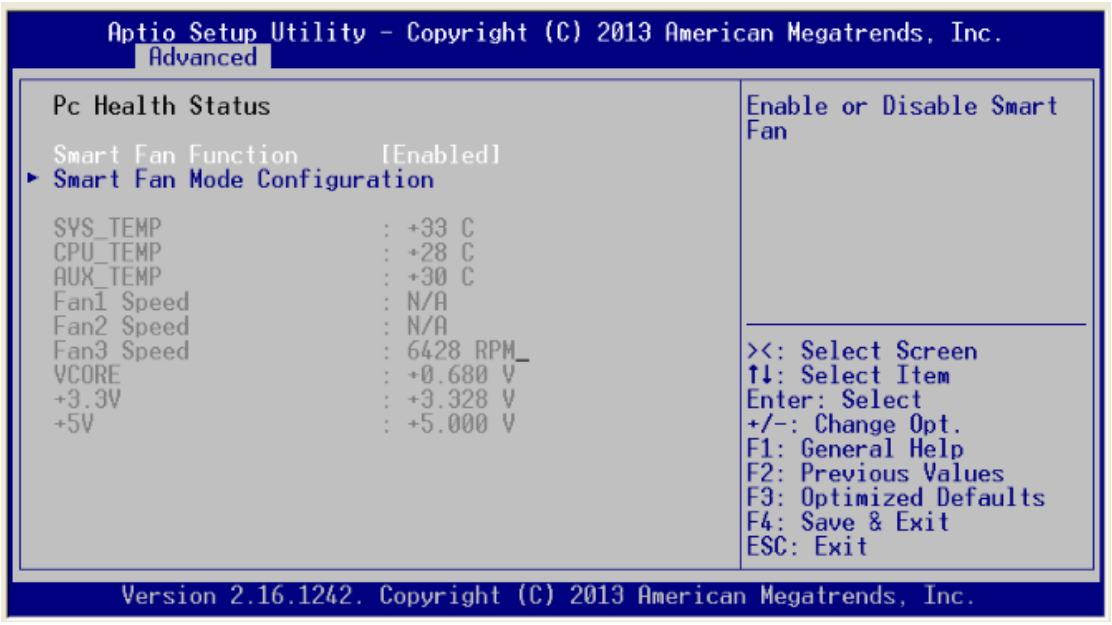
This option specifies the base I/O port address and Default setting is 3F8.
Here are the options for your selection, Disabled.

Serial Port2 Address

This option specifies the base I/O port address and Default setting is 2F8.
Here are the options for your selection, Disabled.

➢ **H/W Monitor**

This screen shows the Hardware Health Configuration, and a description of the selected item appears on the right side of the screen



System Temperature

Show you the current system temperature.

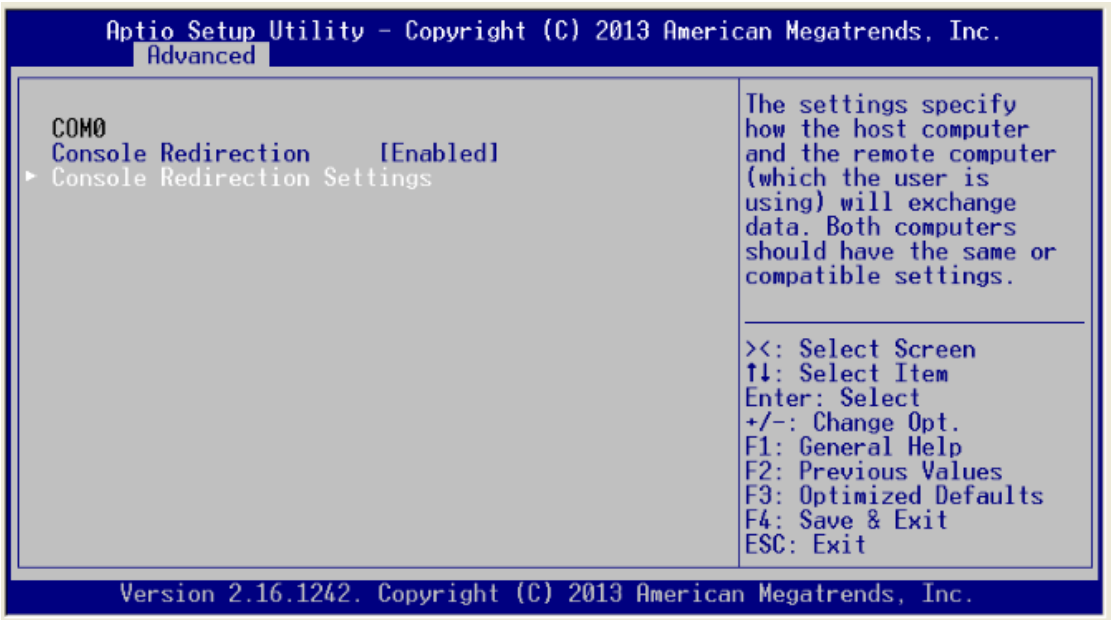
CPU Temperature

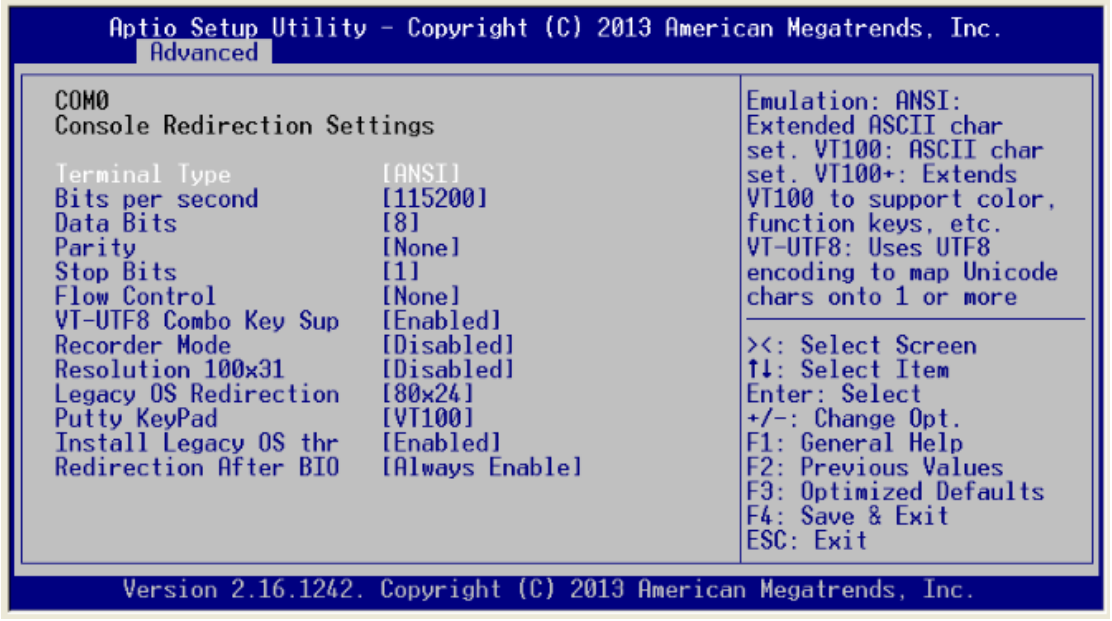
These read-only fields show the functions of the hardware thermal sensor by CPU thermal diode that monitors the chip blocks to ensure a stable system.

Vcore 5V / 3.3V

Show you the voltage of 5V / 3.3V and etc.

➢ **Serial Port Console Redirection**


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
COM0
Console Redirection [Enabled]
Console Redirection Settings
The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.
><: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
COM0
Console Redirection Settings
Terminal Type [ANSI]
Bits per second [115200]
Data Bits [8]
Parity [None]
Stop Bits [1]
Flow Control [None]
VT-UTF8 Combo Key Sup [Enabled]
Recorder Mode [Disabled]
Resolution 100x31 [Disabled]
Legacy OS Redirection [80x24]
Putty KeyPad [VT100]
Install Legacy OS thr [Enabled]
Redirection After BIO [Always Enable]
Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more
><: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Terminal Type
This item allows you to select the target terminal type. Configuration options: ANSI, VT100 and VT-UTF8.

Bits per second
This item allows you to setup the data transfer rate for the console port. The default value is 115200. Available options are "*9600*", "*19200*", "*38400*", "*57600*" and "*115200*".

Flow Control
This item allows you to select flow control for console redirection. The configuration options: None, Hardware and Software.

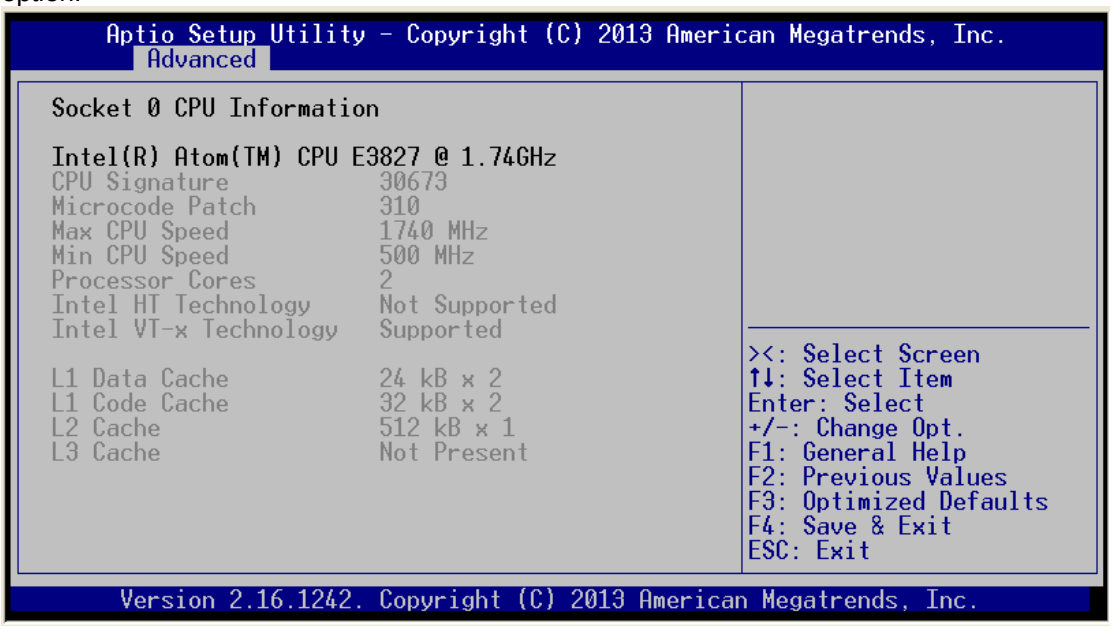
VT-UTF8 Combo Key Support
Use this item to "Enabled" or "Disabled" VT-UTF8 combination key supports for ANSI / VT100 terminals.

Redirection After BIOS POST

Use this item to enable or disable the function of Console Redirection, which allows you maintain a system from a remote location. The default setting is *Always*.

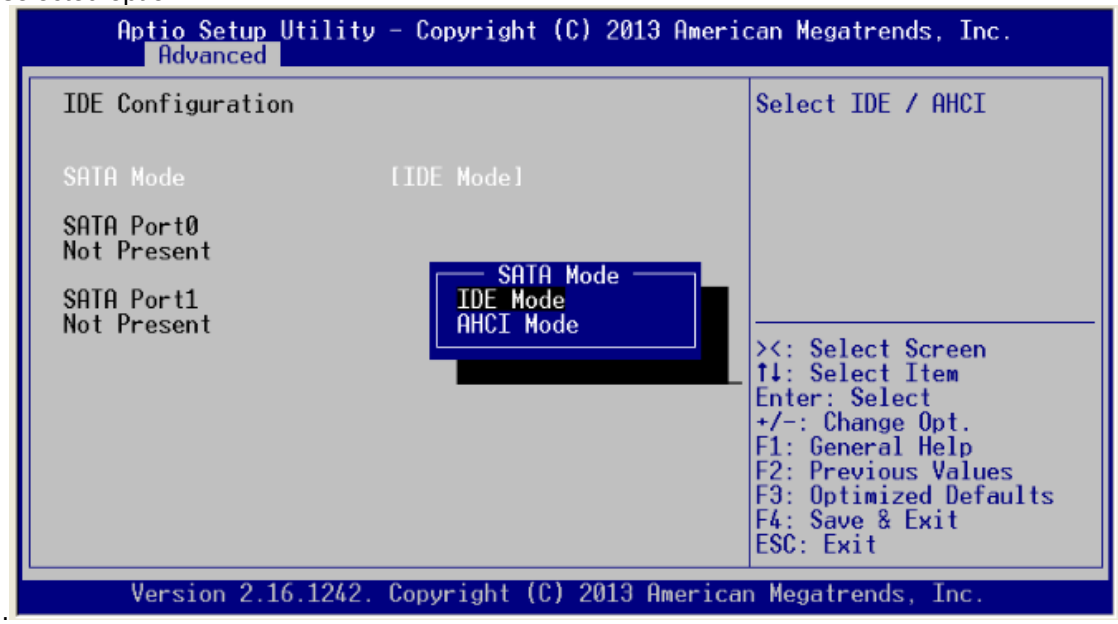
➢ CPU Configuration

This screen shows the CPU Configuration, and you can change the value of the selected option.

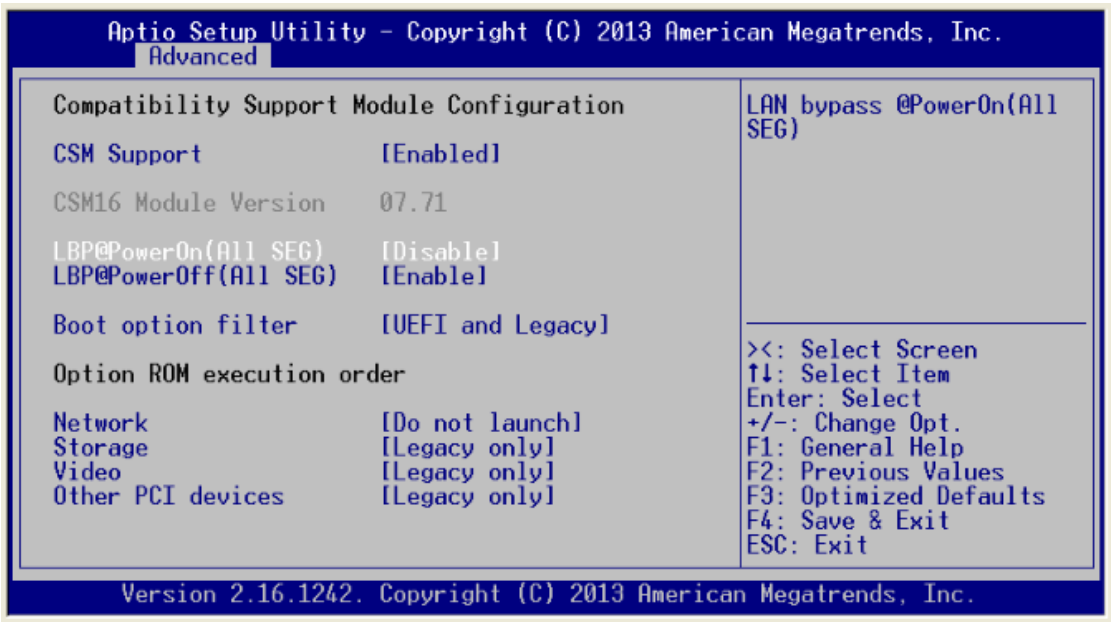

Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
Socket 0 CPU Information
Intel(R) Atom(TM) CPU E3827 @ 1.74GHz
CPU Signature 30673
Microcode Patch 310
Max CPU Speed 1740 MHz
Min CPU Speed 500 MHz
Processor Cores 2
Intel HT Technology Not Supported
Intel VT-x Technology Supported
L1 Data Cache 24 kB x 2
L1 Code Cache 32 kB x 2
L2 Cache 512 kB x 1
L3 Cache Not Present
><: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

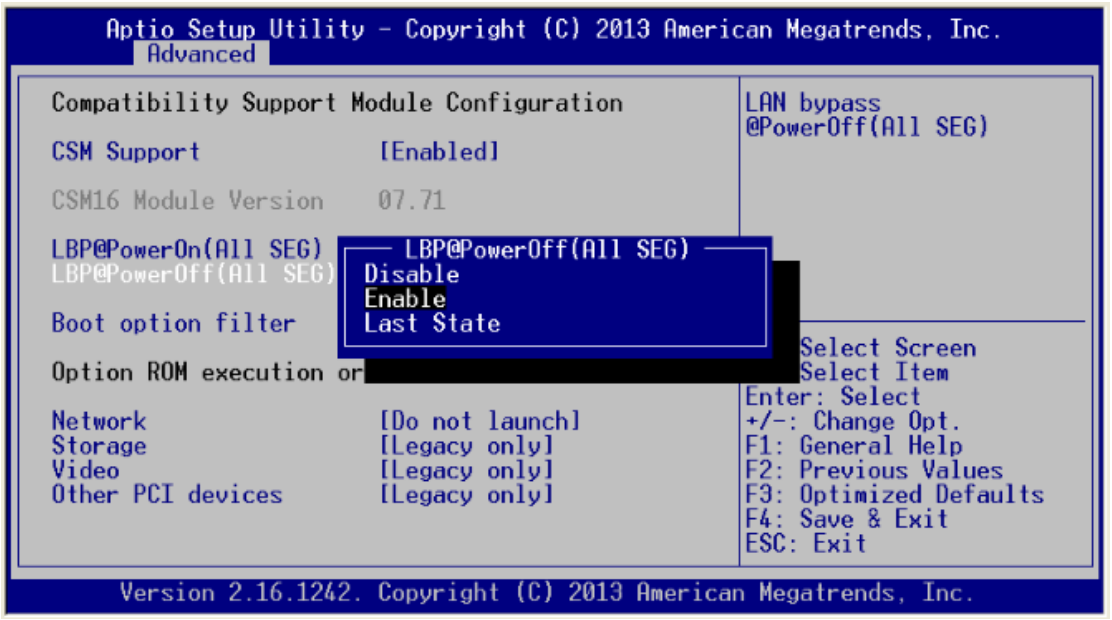
➢ IDE Configuration

You can use this screen to select options for the IDE Configuration, and change the value of the selected option.



- **Lan Bypass Model Configuration**





LBP@power on

Use LBP @Power On item to configure Power On LAN Bypass to "Disabled" ,"Enabled" or " Last State" for LAN Bypass .

LBP@power off

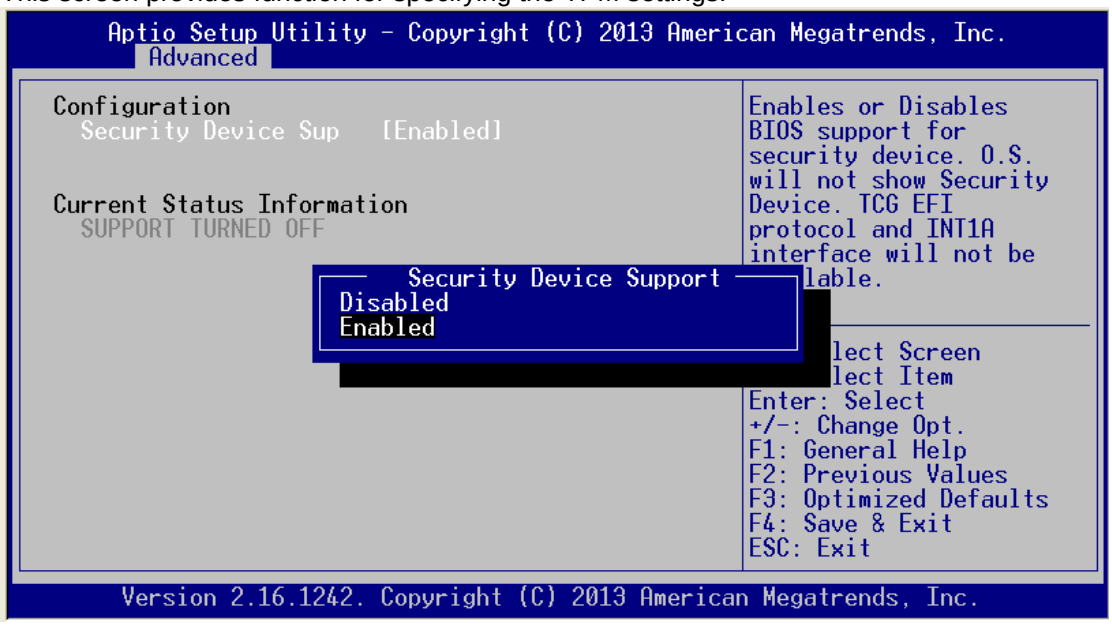
Power off LAN Bypass setting, use LBP @Power Off item to "Disabled" ,"Enabled" or " Last State" for LAN Bypass

Launch PXE OpROM

This item can enable or disable boot option for legacy mass storage devices with option ROM.

➢ Trusted Computing

This screen provides function for specifying the TPM settings.


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Advanced
Configuration
Security Device Sup [Enabled]
Current Status Information
SUPPORT TURNED OFF
Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be
lable.
Security Device Support
Disabled
Enabled
lect Screen
lect Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Configuration

Use this item to enable or disable control TPM function

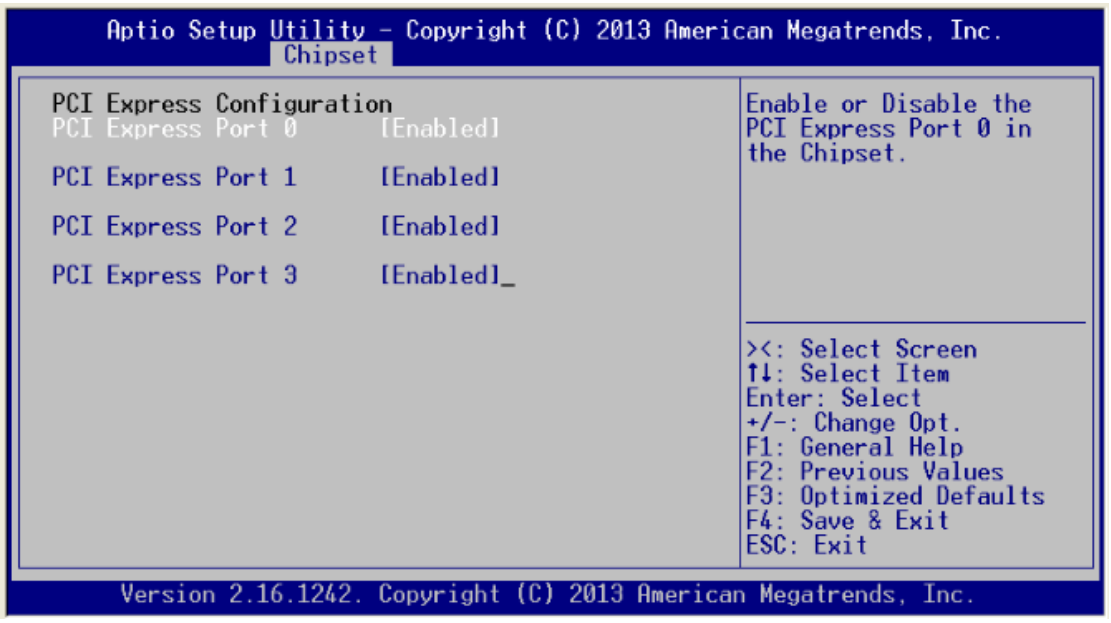
Current State Information

Display current TPM status information

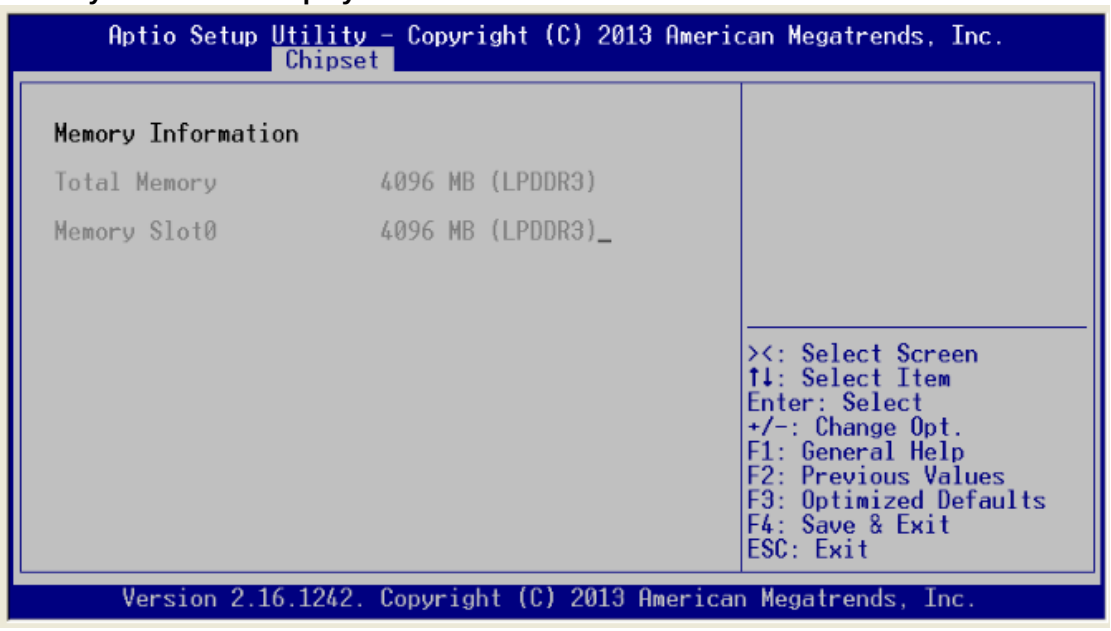
➢ 3.5 Chipset Menu

The Chipset menu allows users to change the advanced chipset settings. You can select any of the items in the left frame of the screen to go to the sub menus:

- **North Bridge**


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Chipset
PCI Express Configuration
PCI Express Port 0 [Enabled]
PCI Express Port 1 [Enabled]
PCI Express Port 2 [Enabled]
PCI Express Port 3 [Enabled]
Enable or Disable the PCI Express Port 0 in the Chipset.
><: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Memory Information display

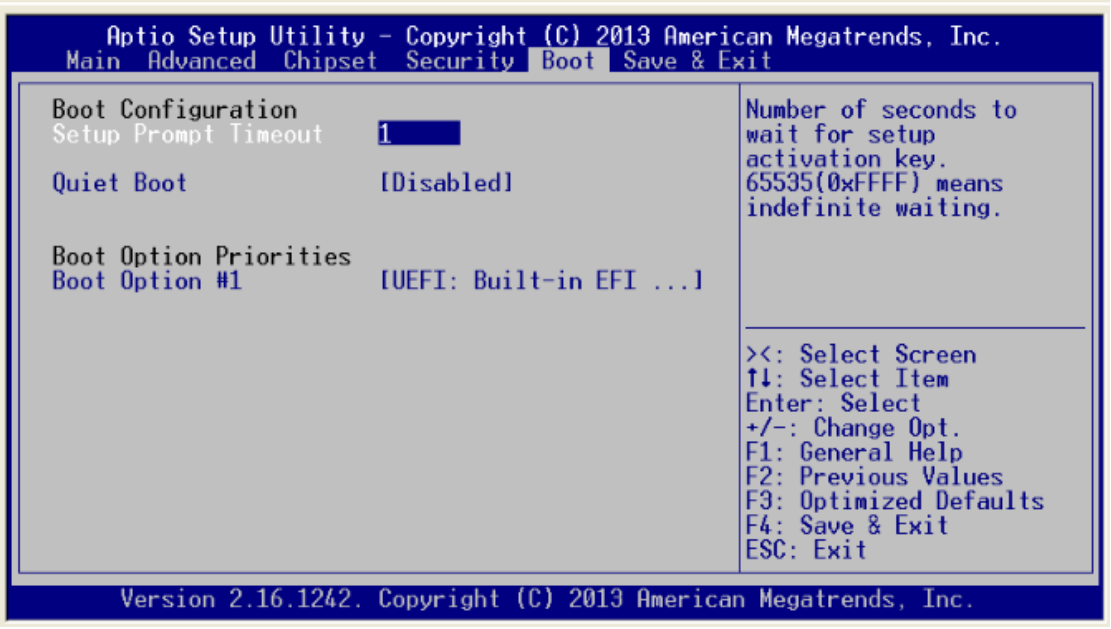


3.5 Boot Menu

The Boot menu allows users to change boot options of the system. You can select any of the items in the left frame of the screen to go to the sub menus:

For items marked with "►", please press <Enter> for more options.

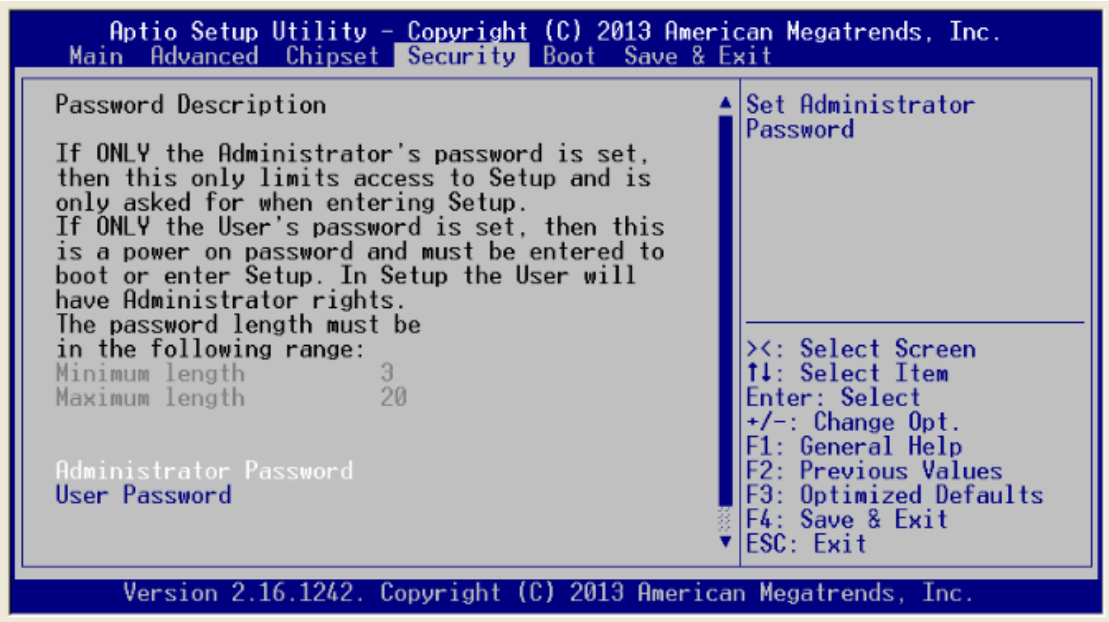
➢ **Boot Setting Configuration**


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit
Boot Configuration
Setup Prompt Timeout
1
Quiet Boot
[Disabled]
Boot Option Priorities
Boot Option #1
[UEFI: Built-in EFI ...]
Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
><: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Quiet Boot
Enable or disable quiet boot option.

3.6 Security Menu

The Security menu allows users to change the security settings for the system.


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.
The password length must be in the following range:
Minimum length 3
Maximum length 20
Administrator Password
User Password
Set Administrator Password
><: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Administrator Password

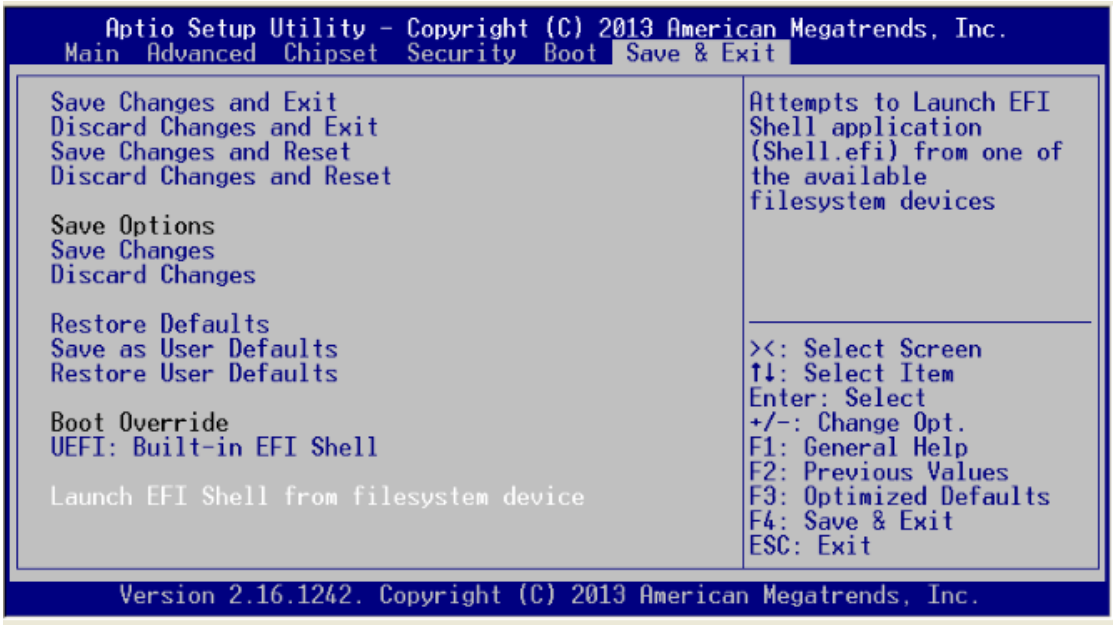
This item indicates whether an administrator password has been set (installed or uninstalled).

User Password

This item indicates whether a user password has been set (installed or uninstalled).

3.7 Exit Menu

The Exit menu allows users to load your system configuration with optimal or failsafe default values.


Aptio Setup Utility – Copyright (C) 2013 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit
Save Changes and Exit
Discard Changes and Exit
Save Changes and Reset
Discard Changes and Reset
Save Options
Save Changes
Discard Changes
Restore Defaults
Save as User Defaults
Restore User Defaults
Boot Override
UEFI: Built-in EFI Shell
Launch EFI Shell from filesystem device
Attempts to Launch EFI Shell application (Shell.efi) from one of the available filesystem devices
><: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.

Save Changes and Exit

When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select Save Changes and Exit from the Exit menu and press <Enter>. Select Ok to save changes and exit.

Discard Changes and Exit

Select this option to quit Setup without making any permanent changes to the system configuration. Select Discard Changes and Exit from the Exit menu and press <Enter>. Select Ok to discard changes and exit.

Discard Changes

Use this item to abandon all changes.

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APPENDIX A
LAN Bypass Configuration

About LAN Bypass

In network security application, it is very important to ensure that network traffic to continue passing through the device even if hardware failure occurs or operating system crashes. LAN bypass gives us a solution for this problem.

The NA342 series Lan bypass function is very flexible. It can be selected at any time and any stage. You can enable LAN bypass for power on state by jumper, BIOS, or by software program when entering into the OS. Moreover, for power off state, you can set up LAN Bypass through BIOS, or use software program when entering into the OS. If you don't do any change, the state will keep the previous power off state.

The NA342 series have LAN bypass capability with the special designed latch relay circuitry. When LAN bypass function is enabled, a relay closes to act as a bridge to route network data flow between LAN port 3 and LAN port 4 . The bypass feature can be activated immediately or according to timer which is configurable from 1 up to 64 seconds. You can write a software program to control bypass operation behavior to fit your requirement.

NOTE: If you need sample codes please contact our FAE directly, and they are for reference purposes only.

LAN Bypass Register Configuration

Power ON Bypass Control Register (0x8E0)

7	6	5	4	3	2	1	0
BYM1	**BYM0**	**X**	**X**	**X**	**X**	**X**	**SEGN1**
W	W	--	--	--	--	--	W

Default value: 00000000

Bit 7~6 BYM1~0

These bits are used to set bypass mode.

00 Not used.

01 Force bypass enable

Relay closes immediately to form LAN bypass on selected segment when power on.

10 Force bypass disable

LAN bypass is disabled immediately on selected segment when power on.

11 Timer enable

When power on, the selected segments are controlled by the setting of LAN bypass Timer Control register.

Bit 5~1 Not used

Bit 0 SEGN1

Select each segment by setting the corresponding bit to 1. When the bit is set to 0, no action happens upon the segment.

NOTE: ***NA342 series support SEGN1 for Lan 3 Lan4 only.***

Data read back from this register is not defined and therefore must be ignored. Reading from this register makes no effect on LAN bypass function. All data in this register will be cleared when system is turned off. If you still want to use power on LAN bypass function, turn on the system and make sure to rewrite the register. Otherwise, if you don't rewrite the register, the status will be kept on last status.

Power OFF Bypass Control Register (0x8E1)

7	6	5	4	3	2	1	0
X	**X**	**X**	**X**	**X**	**X**	**X**	**SEGF1**
--	--	--	--	--	--	--	W

Default value: 00000000

Bit 1~7 Not used.

Bit 0 SEGF1

Use the corresponding bit to configure each segment. Setting the bit to 1 enables LAN bypass on the segment when power off. Clearing the bit to 0 disables LAN bypass on the segment when power off.

NOTE: NA342 series support SEGN1 for Lan 3 Lan4 only.

Data read back from this register is not defined and therefore must be ignored. Reading from this register makes no effect on LAN bypass function. When system is turned off, last data written onto this register will be kept. If you want to make any change, turn on the system and make sure to reconfigure the register.

LAN Bypass Timer Control Register (0x8E2)

7	6	5	4	3	2	1	0
TEXP	**X**	**X**	**X**	**X**	**TVAL2**	**TVAL1**	**TVAL0**
R	--	--	--	--	W	W	W

Default value: 00000000

Bit 7 TEXP (Read Only)

This bit indicates status of hardware timer.

0 Timer has not expired

1 Timer has expired

Bits 6~3 Not used.

Bits 2~0 TVAL2~0

These bits determine the amount of count value in second(s).

001 1 (sec)

010 2 (sec)

011 4 (sec)

100 8 (sec)

101 16 (sec)

110 32 (sec)

111 64 (sec)

000 Timer is not activated.

Writing a value to these bits will reset the hardware timer. The counting process begins again according to the new written value. Software must write count value periodically to ensure that timer will never expire. If timer timeout occurs, relay(s) automatically close to form LAN bypass on selected segment(s) based on the setting of Power On Bypass Control register (SEGN1).

***NOTE:* NA342 series support SEGN1 for Lan 3 Lan4 only.**

Data (bits 6~0) read back from this register is not defined and therefore must be ignored. A read operation upon this register should not refresh the hardware timer.

LAN Bypass Status Register (0x8E3)

7	6	5	4	3	2	1	0
VER3	**VER2**	**VER1**	**VER0**	**BY4**	**BY3**	**BY2**	**BY1**
R	R	R	R	X	X	X	R

Bit 0 Lan Bypass Seg.1 status ➔ Disable=0; Enable=1

Bit 1-3 Not used

Bit 7~4 Firmware version

Without Lan bypass function=1111

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APPENDIX B
WDT Timer for System Reset

WDT (Watchdog Timer)

The hardware supports the WDT (Watchdog Timer) function. While time-out happens after a defaulted period, the WDT will reset the system.

NOTE: ***If you need sample codes please contact our FAE directly, and they are for reference purposes only.***

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APPENDIX C
Warning

- This is a class B Product. In a domestic Environment this Product may cause radio interference in which case the user may be required to take adequate measures.

- It will be danger if battery is incorrectly replaced. Replacing only with the same or equivalent type is highly recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

- **Warning for Hard Disk Drive Selection:**
  TUV approved Hard Disk Drive is preferred for TUV compliance Hard Disk drive-Optional, (NWGQ2), generic, Input Voltage rated 5V DC/1.0A, 12V DC/1.8A maximum. Minimum clearance from uninsulated live parts 4.0 mm.

- The equipment is to be installed in an environment with maximum ambient temperature must not exceed 45°C

- The openings on the enclosure are for air convection hence protected the equipment from overheating. DO NOT COVER THE OPENINGS.

- Lay this equipment on a reliable surface when install. A drop or fall could cause injury.

- The equipment shall be installed according to specification as nameplate. Make sure the voltage of the power source when connect the equipment to the power outlet.

- The current of load and output power of loads shall be not over the specification.

- This equipment must be connected to the reliable earthling before using.

Electric shock hazard inside the redundant power supply.

The exchange of modules shall be done by service person.

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